AMENDMENTS TO THE CLAIMS

Please amend the claims to read as follows:

1. (Original) An instrument for determination of the dc safe area of operation of a semiconductor device-under-test comprises a first dc biaser to apply an adjustable dc bias at a first channel of a device-under-test, and a means to apply a bias signal at a second channel of a device-under-test which means comprises a second dc biaser to apply a dc bias at a bias point within the safe operating limit, and a variable biaser subsequently to apply a variable stimulus comprising fast, superimposed rectangular bipolar pulses, and wherein the instrument further comprises means to measure the current response thereto so as to permit extrapolation of a detailed I-V response in the vicinity of the safe operating limit.

2. (Original) An instrument in accordance with claim 1 wherein the variable biaser generates pulses with progressively increasing amplitude.

3. (Currently Amended) An instrument in accordance with claim 1 ~~or claim 2~~ wherein the variable biaser generates a pulsed wave form that is essentially critically damped so as to achieve a minimum rise time up to the point where the pulses become substantially flat.

4. (Currently Amended) An instrument in accordance with ~~any preceding~~ claim 1 wherein the variable biaser generates a pulsed wave form with a pulse length below about one μs.

5. (Original) An instrument in accordance with claim 4 wherein the variable biaser generates a pulsed wave form with a pulse length below about 100 ns.

6. (Currently Amended) An instrument in accordance with ~~any preceding~~ claim 1 wherein the means to apply the adjustable bias at the input comprises a high stability voltage source serially connected to the input via a resistor.

7. (Original) A measuring instrument in accordance with claim 6 wherein the high stability voltage source is further serially connected through a low pass filter.

8. (Original) A measuring instrument in accordance with claim 7 wherein the resistance is followed by a combination of series inductors and shunt capacitors to form the low pass filter.

9. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1, further comprising a remote head including at least the response measuring means, into which the device-under-test may be directly connected.

10. (Currently Amended) A measuring instrument in accordance with ~~any preceding~~ claim 1, further comprising a remote head including at least means to generate the superimposed fast, generally rectangular, synchronous bipolar pulses, into which the device-under-test may be directly connected.

11. (Original) A method for determination of the dc safe area of operation of a semiconductor device-under-test comprising the steps of:

applying a dc bias at a first channel such as the input of the device-under-test;

applying a dc bias at a second channel such as the output of the device-under-test at a bias point base level within the safe operating limit of the device-under-test;

applying a variable stimulus at the second channel comprising superimposed fast rectangular bipolar pulses;

rapidly measuring the current response thereto at both the channels;

extrapolating from the responses a detailed I-V response for the device in the vicinity of the safe operating limit.

12. (Original) A method in accordance with claim 11 wherein the variable bias is applied in the form of pulses with progressively increasing amplitude.

13. (Currently Amended) A method for determination of the dc safe area of operation of a semiconductor device-under-test comprising the repeated performance of the steps in accordance with claim 11 ~~or claim 12~~ as an iterative succession.

14. (Original) A method in accordance with claim 13 comprising the steps of:

applying an initial dc bias at a point known to be well within the safe operating area of the device-under-test;

superimposing a pulsed bias and in particular a pulsed bias of progressively increased amplitude;

detecting incipient breakdown and removing the pulsed bias;

determining a second dc biasing point nearer to but safely below the breakdown point as identified hereinbefore;

repeating the process steps above until a sufficiently accurate characterisation of the breakdown point is obtained.